
Appendix G: CDR Compliance

This appendix contains a functional description of CDR records and fields available from the Meridian 1 switch with their intended use for Call Accounting purposes. This CDR output is based on X.11 release 21.

Basic calls

Outgoing calls (N record)

When a set or attendant console makes a direct outgoing call without call modifications, a Normal record (N record) is generated. N records can be recognized by having a DN or ATT indication in the originating ID field.

Call Accounting can assign a class mark 'outgoing' to these calls and report outgoing calls based on this class mark.

Incoming calls (N record)

When a set or attendant console receives an incoming call, a Normal record (N record) is generated. N records will be recognized by having a DN or ATT indication in the terminating ID field.

Call Accounting can assign a class mark 'incoming' to these calls and report incoming calls based on this class mark.

Internal calls (L record)

When a set makes a call to another set on the same switch, an Internal record (L record) is generated. Both the originating and the terminating fields will show a DN indication.

Call Accounting can assign a class mark 'internal' to these calls and report on internal calls based on this class mark.

Tandem calls (N record)

For tandem calls, a Normal record (N record) is generated between two trunks. By defining trunk routes as 'internal' or 'external', Call Accounting will classify tandem calls as incoming (originating trunk is external) or outgoing (terminating trunk is external).

When both the originating and terminating ID fields contain either an internal trunk or an external trunk, the call will be classified as 'tandem'. It will sort or print tandem calls based on this class mark.

When the CLID or BLID fields are printed, this information will be used to determine and report on the corresponding DN. Where neither the CLID or BLID is available or not known, Call Accounting will store these records in an exception file and print a warning.

Station Activity (D record)

When activated in Meridian 1, a D record can be generated for every call which a specific set is making. The printing of this D record is controlled on a per station basis. This facility is implemented to allow users to measure call activity on specific sets for Toll Fraud detection or analyze the use of specific sets.

Call Accounting can recognize this D record, assign an 'outgoing', 'incoming', or 'internal' class mark to these calls depending on the presence of a Trunk ID in the originating or terminating ID field, and report on all calls based on this class mark.

Metered Trunks (PPM/AOC)

Where trunks are defined in the Meridian 1 as PPM or AOC, the CDR record will contain cost information in the Charge Info and Call Charge fields.

Call Accounting can read the information in these fields and use it for costing. Two options will be available:

- It will use the Charge Info Field information (pulses or units) and convert it into costs via a configurable conversion factor.
- It will use the Call Charge Field information and convert it via a configurable conversion factor.

Terminating & Originating ID fields

The Terminating and Originating ID fields can contain the following information which will be detectable by Call Accounting and processed accordingly:

- **DNxxxx**—for systems with up to 4 digits DN length to identify a telephone set
- **xxxxxxx**—for systems with up to 4 digits DN length to identify a telephone set
- **Arrrrmmm**—for outgoing trunks, answered calls only
- **Trrrrmmm**—for incoming or outgoing trunks, all calls or non-answered only
- **TN**—for packet terminals
- **ATTN**—for attendants

Call Accounting can report on the following objects based on this information:

- Trunks answered
- Trunks unanswered
- DN's for up to 7 digits
- Attendants
- Packet Terminals

Options for basic calls

Auxiliary Identification

When calls are made from Multiple Appearances DN (MADN), the DN may not be a unique identifier. For that reason, Meridian 1 CDR provides the Auxiliary Identification which is basically the Terminal Number of the set involved in a call.

Call Accounting can configure an option so this field can be read and used to uniquely identify the set involved in a call.

Customer Number

The Meridian 1 can be programmed to accommodate several customers who physically share the switch but do not have common trunks and attendants. This is used in cases such as office blocks.

Call Accounting can configure an option so this field can be read and used to report on every customer separately or in combination.

Tenant Number

The Meridian 1 can be programmed to accommodate several groups who are physically sharing the switch including trunks and attendants.

Call Accounting can configure an option so this field can be read and used to report on every attendant separately or in combination.

Digits (including digits type identifier)

Call Accounting can use the first digits of the digits field to determine if special rates will apply. For example, where the same trunk route is used by two different carriers, two different rate tables will apply.

When an A or E is printed as a Digit Identifier in the CDR record, Call Accounting can use this information on request to check the digits in the Digits field with the trunk ID in the terminating ID field. In these cases, there may be a mismatch between dialed digits and outpulsed digits. The record will be processed as normal, but will be included in an exception field and a warning will be issued when the digits do not match the trunk ID.

For incoming R2MFC calls, a C will be printed as a Digit Identifier in the CDR record. Call Accounting can use this information on request as Calling Line ID.

Include/Exclude digits

The Meridian 1 can optionally include or exclude digits from the digits field. Call Accounting can do the same, both at the start and the end of the string. This will allow the exclusion of sensitive information (e.g., PIN entries) or the compliance with regulatory bodies (exclude last 4 or 7 digits, indicating terminating stations). As well, redundant information can now be taken away from the reports (i.e., access codes) or added to them.

Calling Line ID

Incoming calls from ISDN trunks can have the CLID information printed in the CDR record. Call Accounting has an option to print this CLID information for incoming calls.

For outgoing and tandem calls, the CLID field will be used to determine the corresponding DN and report on it. The call will be reported as an 'outgoing' call from this corresponding DN.

Time to Answer

For incoming calls, the Meridian 1 CDR can provide an option which measures the Time To Answer (TTA). The TTA field will print ringing time for a DN and both queuing time and ringing time for an attendant. This information is used to measure call responsiveness in detail.

Call Accounting can configure an option so this field can be read and used to report on both DN and attendant activity. Both detailed and average reports will be available.

Call Redirection

The TTA field also provides a redirection identifier indicating if ringing time can be fully charged back to the terminating set. When detailed DN and attendant activity reports are produced, this redirection identifier will be printed.

Transferred calls

Start (S), Transfer (X), & End (E) records

When a call is transferred, a Start and End record pair will be generated. When an outgoing call gets transferred more than once, one Start record, one or more Transfer records, and one End record will be generated.

Call Accounting can read and correlate these records and assign duration and costs in every record to the correct DN. Two options will be available:

- It can assign the duration and costs of the whole call to the last DN. Only one DN for this call will be reported.
- It can assign duration and costs of every call segment to the corresponding DN. More DNs for this call will be reported.

CLID & BLID fields in S, X, & E records

When Start or Transfer records are generated for tandem calls, CLID and BLID fields will be used to determine and report on the corresponding DN.

Attendant ID in ID fields for S, X, & E records

Start records are also generated for attendants when they extend/transfer incoming or outgoing calls. An option will be available for attendant transferred calls to ignore attendant activity and charge call duration and costs for the attendant part of the call back to the connected DN.

Conference calls

Conference ID in terminating ID field

When a user adds a party in an existing call via the conference feature, a Start and End record is generated for every additional party. These records will be treated as a separate outgoing call to the new external trunk. The End record will include the conference port as the originating party. Call Accounting will correlate this End record to the Start record and charge costs and duration of the End record to the originating DN printed in the Start record.

Charge Conference (M records)

Charge Conference records (M records) can be generated optionally for conference calls. M records are generated for the conference owner and the external trunk are added to the conference. The M record for every trunk relates to the Start and End record for the same trunk. The account code entered will be used to report as an option for that outgoing call on the trunk.

Charge Account (C records)

Charge Account records (C records) can be generated optionally for conference calls. C records are generated for the conference owner and the external trunk are added to the conference. The C record for every trunk relates to the Start and End record for the same trunk. The account code entered will be used to report as an option for that outgoing call on the trunk.

Non-Answered calls

Incoming non-answered calls (B records)

Incoming calls which are not being answered and are disconnected by the (external) calling party can (optionally) generate an Incoming non-answered call record (B record) for abandoned calls.

Call Accounting can report on abandoned calls and use all sorting and reporting functions available for Basic calls of the abandoned calls. These calls will be classified as 'incoming non-answered'.

Outgoing non-answered calls (A/T indication)

Outgoing calls which are not being answered can (optionally) be identified by the Meridian 1 with a 'T' indicator in the trunk ID field rather than the 'A' indicator when the call is being answered.

Call Accounting can report on non-answered outgoing calls and use all sorting and reporting functions available for Basic calls for these non-answered calls. These calls will be classified as 'outgoing non-answered'.

The Answer Supervision option is not available for all trunks. This option will therefore be set on a trunk route basis in Call Accounting.

Authorization codes/Scheduled access restrictions (A record)

An Authorization codes/Scheduled access restrictions record (A record) can be generated when the user enters either an Authorization Code or a valid Schedule Access Restrictions (SAR) access code. The A record will show the DN of the user in the Originating ID field and the code entered on the digits field.

Call Accounting can read A records and use the code entered as a charge account code. This code will be included in the reports and will be associated with the corresponding call records for that call (Normal, Start, Transfer, and End records).

Charge Account Code (C record)

A Charge Account Code record (C record) can be generated when the user enters a Charge Account Code. The C record will show the DN of the user in the Originating ID field and the code entered on the digits field.

Call Accounting can read A records and use the code entered as a charge account code. This code will be included in the reports and will be associated with the corresponding call records for that call (Normal, Start, Transfer, and End records).

Calling Party Number (P record)

A Calling Party Number record (P record) can be generated when the user enters a special feature key followed by a number. The intent of this record is to bill the costs of that specific call not to the user but to a special number. This can be either another DN, an external number (e.g., a collect call), or a special code. The P record will show the DN of the user in the Originating ID field and the code entered on the digits field.

Call Accounting can read P records and use the code entered as a charge account code. This code will be included in the reports and will be associated with the corresponding call records for that call (Normal, Start, Transfer, and End records).

ACD call records

Special CDR records can be generated for ACD calls. These records will be supported on an optional basis. The following is a summary of these records:

- **R record**—for ACD calls that are transferred
- **F record**—for ACD conference calls
- **Q record**—for ACD calls that are answered by an ACD agent

Data calls

Special CDR records can be generated for Data calls. These records will be supported on an optional basis. The following is a summary of these records.

- **G record**—for internal data calls
- **H record**—for external data calls

Centrex features

A Feature Invocation record (Y record) can be generated for Centrex calls. The Y record is generated when a Centrex feature is accessed via the Meridian 1. The dialed digits printed reflect the accessed feature. Cost should be allocated to the user via a fixed rate for every access. The Y record will be supported on an optional basis.